

scles of the membranes of the brain also had their ordinary quantity of blood, and of course in a relative state of plethora. There were two hydatids of the size of a nut in the lateral ventricles. Nothing else abnormal was discovered.—*Gaz. Med. de Paris*, 21st Nov. 1836.

14. *Remarks upon many symptomatic affections which are encountered in cases of irritation of a greater or less portion of the spinal marrow.* The 44th Vol. of *Rust's Magazine*, contains an interesting memoir on this question, by Dr. Ens, with the details of nearly sixty cases, demonstrative of the important rôle which disease of the spinal marrow plays in a host of affections, the character of which were formerly entirely misunderstood. According to the author there are no diseases or morbid phenomena which cannot result from an irritation of a portion, or of the whole extent of the spinal marrow; and this assertion will astonish the less if we consider the multiplied relations which this part maintains with all the other organs of the economy.

Dr. Ens has classed the different morbid forms under which spinal irritation may appear, in the following manner:

- I. Diseases which particularly affect the nervous system.
 - 1st. Mania and melancholia; nine observations.
 - 2nd. Spinal choræa of Stiebel; three observations.
 - 3d. Opisthotonos, with and without symptoms of chorea; once with tonic spasm of the jaws; one observation.
 - 4th. Continued and periodical vertigo; two observations.
 - 5th. Vertigo with amblyopia and dysphagia; one observation.
 - 6th. Chronic amblyopia; three observations.
- II. Diseases which affect the nervous and sanguineous systems at the same time.
 - 1st. Nervous fevers; four observations.
 - 2nd. Intermittent fevers; three observations.
- III. Diseases which are more particularly arranged among affections of the sanguineous system.
 - 1st. Affections of the thoracic organs.
 - a. Cough, dyspnoea, fever, apparent commencement of pulmonary phthisis; four observations.
 - b. Pleuritis, and pleuro—pneumonia; four observations.
 - c. Confirmed phthisis; four observations.
 - 2nd. Affections of the abdominal viscera.
 - a. An affection simulating colic; three observations.
 - b. An affection at first simulating colic; afterwards cancer of the stomach; two observations.
 - c. An affection presenting itself under the form of the paralysis of Pott; one observation.
 - d. Chronic vomiting; three observations.
 - 3d. Hæmorrhages accompanying affections of the spinal marrow.
 - a. Uterine hæmorrhages; three observations.
 - b. Pulmonary hæmorrhages; two observations.
 - 4th. Difficulty of menstruation accompanied by chlorotic and hysterical phenomena; two observations.

Numerous as are the diseases which we have just enumerated, there yet exists an infinity of shades of morbid phenomena by which spinal irritation is betrayed.

Each of these morbid forms presents, besides the characteristics peculiar to the species of malady which it simulates, an order of phenomena common to all, which distinguishes them as affections, depending upon an irritation of a portion of the spinal marrow of a greater or less extent.

The most characteristic sign of these affections is, according to Dr. Ens, "a greater or less degree of sensibility of a more or less extended portion of the spinal marrow to external pressure, a pressure by which we can augment at will the corresponding sympathetic pain." This characteristic is presented in almost all the facts observed by the author.

In some cases there does not exist an exact correspondence between the portion of the spinal marrow sensible to the touch, and the part of the organism

sympathetically affected. This want of correspondence has been remarked chiefly in the sympathetic affections of the brain.

Beside the local pain which is excited by pressure upon the vertebræ, the diseases depending upon spinal irritation may be recognised by the following symptoms. From the commencement of the disease of which the affection of the spinal marrow takes the form, whether it may be seated in the brain, in the chest, or in the abdomen, the patients feel the greatest lassitude on the least fatigue; it often appears to them that their knees are going to give way; they experience in the epigastric or in one of the hypochondric regions, or often in the superior portion of the abdomen a feeling of tightness, occasioning dyspnœa, frequent yawning, sighs, and sometimes sneezing. Generally there supervenes vertigo with palpitations of the heart; these two symptoms are absent when the inferior portion of the spinal marrow is affected; in some cases the appetite is morbidly excited, mostly, however, it is regular and natural even in the last periods of the disease. Wine and other excitants cannot be borne; in the commencement there are no signs of febrile irritation; the patients can attend to their occupations, but they are sensitive to the impress of atmospheric air.

In certain cases, the preceding symptoms are accompanied, at the end of one or two months, by an inflammatory irritation, which sometimes appears to be located in one, and sometimes in another organ; this state is frequently associated with lymphœmia, convulsions, and irregular chills.

But generally the inflammatory irritation does not supervene until the expiration of six months, a year, and sometimes a later period. It may even happen that the strength becomes exhausted in so gradual a manner as scarcely to be perceptible, without febrile reaction; in this case the patients can support themselves until a few hours previous to death.

But during the development of the fever, the disease, with alternations of better and worse, continues to progress; to the existing symptoms new ones are added; the debility increases and forces the patients to abstain from their occupations; the vertigo increases to such a degree as to render the gait uncertain and tottering; the pains in the epigastrium become more intense; the patients suffer a sensation of drawing, of burning, or of terebration; it also sometimes appears to them as if their thoracic or abdominal parietes were ready to burst. A very frequent symptom, particularly when the irritation is seated in the lumbar region of the spinal marrow, is experienced at this epoch of the disease; i. e. a very annoying pulsation in the epigastrium which appears to come from a vessel of large calibre, (is it from the abdominal aorta, or the œliac trunk?); frequently, also, the patients suffer in the præcordial region a sensation as if a heavy body (is it the heart?) were sustained by a single thread, and which threatens each moment to fall; sighs are accompanied by groaning; the necessity for air becomes so imperative, that the patient makes frequent and long inspirations. In the mean time, the sympathetic affection continues to progress. Menstruation, when it exists, ceases after some irregular returns; sometimes uterine hæmorrhage supervenes, particularly when the menses have been for some months suppressed. At first there is constipation, and then the alvine evacuations occur only every three, four, six, or eight days; more rarely diarrhœa is established; the excretion of urine is less affected. In those cases in which the functions of the bladder are altered, dysuria and ischuria are most frequently observed; in two cases M. Ens has met with complete incontinence of urine; he has never remarked, as some authors pretend, that the quantity of urine was usually diminished.

There also exists other less constant symptoms of irritation of the spinal marrow: these are numbness, pains, spasms of the limbs, painfully annoying cramps in the calves of the legs, usually at night; sometimes these cramps attack one or the other of the middle, the ring or the little finger, and in some rare cases one of the great toes. Œdema of the feet also belongs to this category of symptoms.

A very common phenomenon is the interruption of sleep; in some cases this has failed for weeks and whole months. More rarely a state of somnolency more decided than customary, is observed. The sight in the greater number of cases is diminished or perverted, there are some exceptions when the lower part of the spinal marrow is more particularly or alone affected. Generally the patients, in wishing to look at an object feel their sight troubled; it is impossible for them to

read, for they soon confound characters and lines, which appear to them as blue lines before the eyes. Flashes of light and diplopia are more rarely observed.

The sense of hearing is less frequently affected than that of sight; sometimes, however, there is a buzzing, tingling and perception of imaginary sounds. In these cases the memory is so much weakened, that the patients can not recall what they have done or said a moment before.

The taste is sometimes perverted or entirely destroyed; in some cases M. Ens has observed stammering, and in one, complete aphonia which lasted for five weeks.

A great number of patients are affected with *clavus hystericus*, or more ordinarily there is a violent pain extending over the whole head, which forces them to cry out in despair. In some of these cases the author has seen all the hairy scalp swelled and oedematous.

There sometimes exists an intense pain along the course of the pneumogastric nerve upon the sides of the neck, which is referred by the patient to the tracheal artery; at other times the persons affected experience the sensation of the *globus-hystericus* in the abdomen. One man said that he felt in bending, in addition to pain in the back, a retraction of the abdominal muscles causing so great a hollow as to admit the hand. Other persons complain of a pain in the back, as if drops of cold water were running slowly along the vertebral column, or as if pieces of ice were applied at each instant. Twice the author has observed the spasmodic pointing of the lips of M. Olivier; once trismus and once *opisthotonos*.

The patients generally lie on the back or inclined towards the affected side, and experience great pain and difficulty in turning; the skin during the time or in the intervals, is fresh, pale or icteric in some, particularly acute cases, characterized by accessions of irregular chills, a very remarkable phenomenon is observed, viz. that during the paroxysms of cold the skin is comfortably warm, and even moist, and that it becomes cooler as this attack draws towards its end, until it becomes of an icy coldness or at the moment when the paroxysm terminates, the patient experiences a sensation of natural heat within.

When once febrile action is evinced, the prognosis becomes more serious, and the success of the treatment uncertain. The patients are confined to their rooms or their beds. The appetite and digestion, until now regular, become deranged; poignant pain or a burning heat passes over and traverses the spinal column; the emaciation increases. If the disease is most particularly seated in the chest, the cough which previously was dry now becomes humid, and by degrees a true pulmonary phthisis is developed. At this period the *decubitus* described by M.M. Olivier and Hinterberger, is remarked to a greater degree than the author has observed in any other affection.

The last observation which concludes the general picture of affections depending upon an irritation of the spinal chord, is that the fever, which is sometimes developed, after having run its course, suddenly stops. If the fever does not take this crisis and the disease is not brought back again to its former chronic state, it may happen that the disorder of the nerves at first spread over the whole system, becomes concentrated in the brain; in this case a very serious state of apyretic delirium is developed.

Such are the general symptoms which characterize the diseases dependent upon an irritation of the spinal marrow; these symptoms have been observed in the sixty cases which Dr. Ens gives at the end of his treatise; and which would occupy too much space to be inserted here; we must be satisfied with remarking that in all these cases, pressure upon the vertebrae has not only occasioned a more or less acute pain in the place itself, but has always increased the sympathetic affection, whatever might be its seat. The irritation of the part of the spinal marrow most frequently observed, is from the last cervical vertebra to the eighth or ninth dorsal; also the sympathetic affections of the chest and of the upper part of the abdomen, are those which are by far the most common; it is not uncommon to see cough, dyspnoea, pain in the epigastrium, and palpitation in the coeliac trunk, accompanying the pain and morbid phenomena arising from the irritation of the cervical and lumbar portions.

The method of treatment proposed by Griffin, Hinterberger and others, con-

sisting in the employment of leeches, vesicatories and opiate mercurial frictions over the painful spot, and in the administration of purgatives and of calomel united with opium given internally, has been, in most cases, crowned with complete success, and is one of the arguments which best supports the existence of sympathetic diseases, depending upon a spinal irritation.—*Gazette Médicale, de Paris* 14 Nov. 1835.

15. *On the Pathology of Paraplegia.* By ROBERT J. GRAVES.—By paraplegia is meant, as you are aware, that species of paralysis in which the lower extremities are affected, a paralysis frequently embracing loss of motion and loss of sensation in the lower extremities, accompanied in many instances with derangement of the motor power of the bladder and rectum. Now I wish you clearly to understand that it is not my intention to describe the symptoms or discuss the causes of those species of paraplegia which are well ascertained, and of which you will find satisfactory descriptions in your books; under this head may be classed all those cases which are produced by disease of the spinal marrow, its membranes, the vertebrae or their appendages, their ligaments, and diseases directly affecting the great nerves which supply the lower extremities. All these matters have been sufficiently studied, and require no additional observations from me; my object is to elucidate some of the obscurer varieties of paraplegia.

Before I commenced my investigations on the subject, pathologists, in endeavouring to ascertain the causes of paralysis, sought for the sources of the disease almost solely in the centres of the nervous system. They looked for the causes of paralysis in the brain or spinal cord, where they supposed it originated either in organic or functional derangement of these important organs. In the lectures to which I have already referred, I showed that this mode of accounting for all forms of paralysis, by referring them to original disease of the nervous centres, was in many instances incorrect, and proved, I think to the satisfaction of the class and those who read the lectures, that a most important and influential cause of paralysis had been hitherto nearly overlooked, a cause which, commencing its operation on the extremities, and not on the centres of the nervous system, might, by a reflex action, produce very remarkable effects on distant parts. I brought forward on that occasion many arguments, facts, and cases, to prove the possibility of such an occurrence, to show that it frequently happens that impressions made on the extremities of the nerves will generate a morbid action in them, that this morbid action will be conveyed along their branches and trunks to the spinal cord or brain, and that, continuing its propagation, it may, by a retrograde course, be carried thence along the nerves to distant organs, and in this way give rise to disease in parts originally intact and healthy. I brought forward several instances to prove that when a certain portion of the extreme branches of the nervous tree has suffered an injury, the lesion is not confined merely to the part injured, but in many instances is propagated back towards the nervous centres, and that in this way not only the nervous filaments of the injured part may be affected, but also the main trunk of the nerve and other branches; or that the lesion may reach the brain or spinal cord, and thus produce still more extensive effects on the system. What I endeavoured to impress upon the class at that time was, that pain, numbness, spasm, and loss of the power of muscular motion, may be produced by causes acting on the extremities of the nerves, and that such affections commencing in the extremities of the nerves may be propagated towards their centres so as to be finally confounded with diseases originating in the centres themselves. For a detailed account of my views on this subject I beg leave to refer to the published lectures; at present I shall content myself with recapitulating a few of the facts on which these views were grounded.

If you place your hand in snow or ice-cold water, you will find that it is not merely the parts subjected to the influence of cold that become numb, and that the diminution of power is not entirely limited to the muscles concerned in the peculiar motions of the fingers, but extends also to those of the fore-arm, by which the principal motions of the hand are performed. Here the impression of cold is found to affect not only the parts immediately exposed to it, but also parts that are quite removed from its influence and warmly covered. We see that not only